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# State of Utah

## DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

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M/035/009  
Wayne Heddy

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DIVISION OF  
OIL, GAS & MINING

November 10, 1993

Mr. Dave Hodson, Manager  
Barneys Canyon Mine  
P.O. Box 311  
Bingham Canyon, UT 84006-0311

RE: Out of Compliance Status, Monitoring  
Site BC-283, Ground Water Discharge  
Permit UGW350001

Dear Mr. Hodson:

We received a letter from Mr. Steve Lackey, dated September 21, 1993, regarding water quality monitoring of well BC-283, and a report from George Condrat of Geo-West. The report covers several years of monitoring and the recent event where TDS exceeded ground water protection and out of compliance levels for the months of June and August 1993. Well BC-283 is in the middle of the downgradient wells. TDS values in several samples are now about 891 and have exceeded the established "out of compliance" level of 878 mg/l (Table 2 of permit) in two consecutive months. These results indicate the well is now in out of compliance status.

After review of the data and your report, we are not convinced the "erratic rise in TDS" is the result of sampling or analytical error as you suggested, as there are several other only partly explored possibilities. The rise, if it is real, appears to be comprised mainly of the major cations (Na, Ca, Mg) and mainly chloride. A concurrent increase did not occur in sulfate nor was it reported for nitrate or cyanide. Thus the increase, if real, would not appear to be related to the actual mining process or the cyanide leach operation. The reason for an increase in chloride is not readily apparent. Chloride was a parameter that was reported to be high in the sulfate plume below the Kennecott Copper operation, and was never satisfactorily explained during the five year ground water study. An increase in chloride could also be related to leaching of the disturbed soils or to deicing procedures.

In order to demonstrate the assumption that the problem is a sampling or analytical error we believe the sampling and analysis routine needs changing. This is an issue raised by your consultant. Ten monthly samples from BC-283 will need to be collected and analyzed for the

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compliance monitoring parameters and for K, PO<sub>4</sub>, and Fl. The cations and anions in the results will need to balance to about 5%. Please submit the above information showing analytical results and ion balance with the next quarterly monitoring reports.

The ground water permit Part I G.1 requires the permittee to submit within 30 days a plan and time schedule for assessment of the source extent, and potential dispersion of the contamination and an evaluation of potential remedial action. Your submittal was timely but has not resolved the issue and therefore we are requesting the above issues be addressed along with submission of the additional requested information listed above and below. Consideration should also be given to the current dust suppression and deicing measures and the quantities and type of chemicals used. Please provide this information by December 15, 1993. Barneys Canyon should continue to monitor BC-283 monthly until directed otherwise. Only BC-283 is affected at this time. Therefore, further monitoring of BC-283 and the other monitoring wells and review of the requested information is needed to determine if appropriate corrective action or establishment of new protection levels is required.

We are in the process of reviewing your waste rock management plan dated October 12, 1993 that we recently received along with the report you had prepared on sulfides at your mine sites. We will contact you for a discussion following our review. This aspect may have some bearing on the above issues.

If you have questions, please call Mack Croft or Larry Mize at 538-6146.

Sincerely,



Fred C. Pehrson, P.E., Manager  
Permits, Compliance & Monitoring Branch

FCP:MC:gt

cc: DOGM ✓  
Eva Hoffman, EPA  
SLC/County Health Dept.  
George Condrat, Geo-West

P:BC-283WELL.LTR  
FILE:BARNEYS CANYON